# McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

## Sixth Edition

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**On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meterorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment.** ***(Image copyright © Dr. Luann Becker. Reproduced with permission.)***

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Procaryotes,* Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology,* McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates,* 4th ed., McGraw-Hill, 2000; *U.S. Air Force Glossary of Standardized Terms,* AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology,* Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology,* AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms,* Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms,* Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations,* Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use,* National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology,* Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms,* Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology,* American Meteorological Society, 1959; *ADP Glossary,* Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms,* Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico,* National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary,* 2d ed., Atomic Energy Commission.

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...the surface and the flow is laminar. { 'lam·ə·nər 'baün·də ˌlā·ər }

**laminar composite** [MATER] A composite material that consists of two or more layers of different materials that are bonded together. { 'lam·ə·nər kəm'päz·ət }

**laminar flow** [FL MECH] Streamline flow of an incompressible, viscous Newtonian fluid; all particles of the fluid move in distinct and separate lines. { 'lam·ə·nər 'flō }

**laminar flow control** [AERO ENG] The removal of a small amount of boundary-layer air from the surface of an aircraft wing with the result that the airflow is laminar rather than turbulent; frictional drag is greatly reduced. { 'lam·ə·nər 'flō kən,trōl }

**Laminariales** [BOT] An order of brown, large, structurally complicated, often highly differentiated members, commonly called kelps, of the algal class Phaeophyceae; distinctive features include a life history in which microscopic, filamentous, dioecious gametophytes alternate with a massive, parenchymatous sporophyte, and a mature sporophyte typically consisting of a holdfast, stipe, and one or more blades. { ˌlam·əˌnar·ē'ā·lēz }

**Laminariophyceae** [BOT] A class of algae belonging to the division Phaeophyta. { ˌlam·iˌnar·ē·ō'fīs·ēˌē }

**laminar sublayer** [FL MECH] The laminar boundary layer underlying a turbulent boundary layer. { 'lam·ə·nər 'səbˌlā·ər }

**laminar wing** [AERO ENG] A low-drag wing in which the distribution of thickness along the chord is so selected as to maintain laminar flow over as much of the wing surface as possible. { 'lam·ə·nər 'wiŋ }

**laminate** [MATER] A sheet of material made of several different bonded layers. { 'lam·əˌnāt }

**laminated composite** [MATER] A composite material consisting of layers of various materials. { 'lam·əˌnād·əd kəm'päz·ət }

**laminated contact** [ELEC] Switch contact made up of a number of laminations, each making individual contact with the opposite conducting surface. { 'lam·əˌnād·əd 'känˌtakt }

**laminated core** [ELECTROMAG] An iron core for a coil transformer, armature, or other electromagnetic device, built up from laminations stamped from sheet iron or steel and more or less insulated from each other by surface oxides and sometimes also by application of varnish. { 'lam·əˌnād·əd 'kór }

**laminated glass** *See* nonshattering glass. { 'lam·əˌnād·əd 'glas }

**laminated metal** [MET] A sheet or bar of composite metal composed of two or more bonded layers. { 'lam·əˌnād·əd 'med·əl }

**laminated plastic** [MATER] A thin sheet made of superposed layers of plastic bonded or impregnated with resin or compressed under heat. { 'lam·əˌnād·əd 'plas·tik }

**laminated spring** [DES ENG] A flat or curved spring made of thin superimposed plates and forming a cantilever or beam of uniform strength. { 'lam·əˌnād·əd 'spriŋ }

**laminated wood** [MATER] Board or timber composed of layers of wood glued together with the grains parallel. { 'lam·əˌnād·əd 'wůd }

**lamina terminalis** [ANAT] The layer of gray matter in the brain connecting the optic chiasma and the anterior commissure where the latter becomes continuous with the rostral lamina. { 'lam·ə·nə ˌtər·məˈnāl·is }

**lamination** [GRAPHICS] A plastic protective film on a printed sheet that has been bonded by heat and pressure. [MATER] One of the thin punchings of iron or steel used in building up a laminated core for a magnetic circuit. [MED] An operation in embryotomy in which the skull is cut in slices. [SCI TECH] Arrangement in layers. { ˌlam·əˌnā·shən }

**laminectomy** [MED] Surgical removal of the lateral portion of the neural arch from one or more vertebrae. { ˌlam·əˈnek·tə·mē }

**laminite** [GEOL] Any sedimentary rock composed of millimeter- or finer-scale layers. { 'lam·əˌnīt }

**laminography** *See* sectional radiography. { ˌlam·əˈnäg·rə·fē }

**Lamé's theorem** [MECH] When three forces act on a particle in equilibrium, the magnitude of each is proportional to the sine of the angle between the other two. { la'mēz ˌthir·əm }

**lamp** [ENG] A device that produces light, such as an electric lamp. { lamp }

**lampadite** [MINERAL] A mineral composed chiefly of hydrous manganese oxide with as much as 18% copper oxide and often cobalt oxide. { 'lam·pəˌdīt }

**lamp bank** [ELEC] A number of incandescent lamps connected in parallel or series to serve as a resistance load for full-load tests of electric equipment. { 'lamp ˌbaŋk }

**lampblack** [MATER] A grayish-black amorphous, practically pure form of carbon made by burning oil, coal tar, resin, or other carbonaceous substance in an insufficient supply of air; used in making paints, lead pencils, metal polishes, electric brush carbons, crayons, and carbon papers. { 'lampˌblak }

**lampbrush chromosome** [CELL MOL] An exceptionally large chromosome characterized by fine lateral projections which are associated with active ribonucleic acid and protein synthesis. { 'lampˌbrəsh 'krō·məˌsōm }

**lamp cabin** *See* lamp room. { 'lampˌkab·ən }

**lamp-charging rack** [MIN ENG] Mine-lamp-charging racks which allow miners to store lamp units for recharging after daily use. { 'lampˌchär·jiŋˌrak }

**lamp cord** [ELEC] Two twisted or parallel insulated wires, usually no. 18 or no. 20, used chiefly for connecting electric equipment to wall outlets. { 'lampˌkȯrd }

**lamp depreciation** [ELEC] The decrease in amount of light emitted by a lamp during its operating life. { 'lamp di,prē·shēˌā·shən }

**lampholder** [ELEC] A device designed to connect an electric lamp to a circuit and to support it mechanically. { 'lampˌhōld·ər }

**lamphouse** [ENG] **1.** The light housing in a motion picture projector, located behind the projector head ordinarily consisting of a carbon arc lamp operating on direct current at about 60 volts, a concave reflector behind the arc which collects the light and concentrates it on the film, and cooling devices. **2.** A box with a small hole containing an electric lamp and a concave mirror behind it, used as a concentrated source of light in a microscope, photographic enlarger, or other instrument. { 'lampˌhaůs }

**lamping** [MIN ENG] Use of a portable ultraviolet lamp to reveal fluorescent minerals in prospecting. { 'lam·piŋ }

**lamp inrush current** [ELEC] The surge of current that occurs when an incandescent lamp is turned on. { 'lamp 'inˌrəsh ˌkər·ənt }

**lampman** [MIN ENG] A person responsible for maintaining and servicing miners' lamps. { 'lamp·mən }

**lamp oil** *See* kerosine. { 'lampˌȯil }

**lamprey** [VERT ZOO] The common name for all members of the order Petromyzonida. { 'lam·prē }

**Lampridiformes** [VERT ZOO] An order of teleost fishes characterized by a compressed, often ribbonlike body, fins composed of soft rays, a ductless swim bladder, and protractile maxillae among other distinguishing features. { ˌlam·pridə'fōrˌmēz }

**lamprobolite** *See* basaltic hornblende. { ˌlam·prəˈbōˌlīt }

**Lamprocystis** [MICROBIO] A genus of bacteria in the family Chromatiaceae; cells are spherical and motile, have gas vacuoles, and contain bacteriochlorophyll *a* on vesicular photosynthetic membranes. { ˌlam·prəˈsis·təs }

**lamp room** [MIN ENG] A room or building at the surface of a mine for charging, servicing, and issuing all cap, hand, and flame safety lamps. Also known as lamp cabin; lamp station. { 'lampˌrüm }

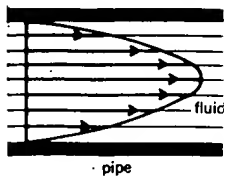
**Lampropedia** [MICROBIO] A genus of gram-negative, obligately anaerobic cocci of uncertain affiliation; cells form pairs, tetrads, or flat squared tablets. { ˌlam·prəˈpēd·ē·ə }

**lamprophyllite** [MINERAL] $Na_2SrTiSi_2O_8$ A mineral composed of titanium strontium sodium silicate. { ˌlam·prəˈfiˌlīt }

**lamprophyre** [PETR] Any of a group of igneous rocks characterized by a porphyritic texture in which abundant, large crystals of dark-colored minerals appear set in a not visibly crystalline matrix. { 'lam·prəˌfī·ər }

**lampshade paper** [MATER] Paper that is translucent and either flame-resistant or flame-retardant; often made of wood pulp, vegetable parchment, or laminated glassine. { 'lampˌshād ˌpā·pər }

**lamp station** *See* lamp room. { 'lampˌstā·shən }




LAMINAR FLOW

Laminar flow in a circular pi... this case the velocity adjace... the wall is zero and increas... maximum in the center of th... pipe.

LAMPRIDIFORMES

Oarfish *(Regalecus glesne)*; l... to over 20 feet (6 meters).

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**LABORATORY POLYMERIZATION PROCEDURES.** See POLYMERIZATION PROCEDURES, LABORATORY.

**LAC.** See RESINS, NATURAL.

**LACQUERS.** See COATINGS.

**LACTAM POLYMERS.** See POLYAMIDES; *N*-VINYL AMIDE POLYMERS.

**LACTONES.** See POLYESTERS.

**LADDER AND SPIRO POLYMERS.** See SPIRO AND LADDER POLYMERS.

## LAMINATES

Laminates consist of layers or laminae bonded together by suitable binders. The laminae are usually materials, such as paper or woven fabrics, which are readily available in continuous-sheet form. The binders are synthetic resins, predominantly phenolic resins, which are solvent-coated or impregnated into the base laminae. After drying, several laminae are stacked and the entire mass is consolidated under heat and pressure to form a rigid sheet or panel utilized for its mechanical, electrical, chemical, or aesthetic qualities.

Some writers have suggested that laminating had its origins in antiquity, pointing to the bonding of papyrus with natural gums and resins by the Egyptians. Modern practices, however, can easily be traced to the advent of synthetic phenol–formaldehyde resins as developed by Baekeland in 1907. Phenolic resins are inherently brittle and are usually processed by adding reinforcing fillers, followed by molding under heat and pressure. Layers of reinforcement, such as cotton fabric, strengthened the resin, which could then be made available in large sheets suitable for fabrication into many useful articles. Thus, the primary rea-